

MIL-H-5606D (1)

*received
5/84 LL*

DPM 366
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BRAYCO® MICRONIC 756E HYDRAULIC FLUID, PETROLEUM BASE; AIRCRAFT, MISSILE AND ORDNANCE

DESCRIPTION: BRAYCO® MICRONIC 756E is a petroleum base, low viscosity, red-colored hydraulic fluid for aircraft missile and ordnance use. It is a blend of highly refined, selected base stock with suitable additives to yield a product with exceptionally good viscosity-temperature characteristics, good anti-wear properties, low rubber swell, and excellent oxidation stability. The use of a newly developed polymeric viscosity index improver of lower molecular weight has significantly increased the shear stability of BRAYCO® MICRONIC 756E over previous versions of this widely used hydraulic fluid.

USE: BRAYCO® MICRONIC 756E is designed for use in aircraft, missile, and ordnance hydraulic systems where long term stability and low temperature fluidity is necessary. It is intended for use in automatic pilots, shock absorbers, brakes, flap-control mechanisms, missile hydraulic servo-controlled systems and other hydraulic systems using synthetic sealing materials. Fluids compounded to meet this specification undergo certain changes with use. Further information relative to usable life may be found in Fainman and MacKenzie, "The Characteristics and Performance of Specification MIL-H-5606 Hydraulic Fluid," Lubrication Engineering, 22234 (1966).

PACKAGE: BRAYCO® MICRONIC 756E meets all the requirements and is qualified under Military Specification MIL-H-5606D (1) which supersedes MIL-H-5606C, MIL-O-5606, AN-O-366, AN-VV-O-366b and AAF-3580.

PROPERTIES

TEST	SPECIFICATION REQUIREMENTS	TYPICAL
Viscosity, centistokes, at 300°F (148.9°C)	—	2.97
250°F (121.1°C)	—	3.95
212°F (100°C)	5.0 min.	5.14
130°F (54.4°C)	—	10.04
104°F (40°C)	13.0 min.	13.50
32°F (0°C)	—	45
0°F (-17.8°C)	—	110
-40°F (-40°C)	500 max.	497
-65°F (-54°C)	3000 max.	2284
Pour Point, °F (°C)	-75 max. (-59.4 max)	-85 (<-60)
Flash Point, PMCC, °F (°C)	180 min. (82 min.)	192 (89)
Acid or Base Number, mgKOH/gm	0.20 max.	0.086
Color	red per standard	Passes
Corrosion and Oxidation Stability (Oil airblown at 275°F (135°C) for 168 hours with immersed metal specimens)		
Weight change: Copper	±0.6 max.	-0.053
Aluminum Alloy	±0.2 max.	-0.023
Magnesium Alloy	±0.2 max.	-0.015
Steel	±0.2 max.	0.000
Cadmium Plated Steel	±0.2 max.	+0.007

Appearance	Copper Color, ASTM	3 max.	Passes
	Pitting, etching, corrosion	None	Passes
Viscosity Change at 104°F (40°C), %		-5 to +20	+9.6
Neutralization Number Increase		0.20 max.	0.02
Low Temperature Stability, -65°F (-54°C) for 72 hours		no solid or separation	Passes
Shear Stability, Percentage Viscosity Decrease at Decrease at 104°F (40°C) at -40°F (-40°C)		Reference Fluid (13)	0.7
			0.9
Change in Neutralization Number		0.20 max.	0.00
Synthetic Rubber Swell, % Volume Increase of L-Rubber (BunaN)		19.0-30.0	28
Evaporation, 6 hrs. @ 160°F (71°C), %		20 max.	10
Copper Strip Corrosion, 72 hrs. at 275°F (135°C), ASTM		2 max.	2b
Solid Particle Contamination*			
Number of particles per 100 ml of fluid			
Particle size range, microns 5-15		2,500 max.	460
	16-25	1,000 max.	87
	26-50	250 max.	29
	51-100	25 max.	9
	100 & Larger	10 max.	2
Weight of Residue per 100 ml of fluid, mg.		0.3 max.	0.00
Time to filter 100 ml., minutes		15 max.	10
Foaming Characteristics			
Foaming Tendency ml. at 75°F (24°C)		65 max.	50
Foaming Stability, ml. at end of 10 mins.		Complete collapse	Passes
Water %		0.01 max.	0.006
Steel-on-Steel Wear, mm		1 max.	0.65

*Samples of filled and sealed containers taken at periodic intervals to be representative of each days' operation. The number of samples shall be the cube root of the number of containers filled that day.

TYPICAL PHYSICAL PROPERTIES, NO REQUIREMENTS

Specific Gravity, 60°F/60°F (15.5°C/15.5°C)	0.873
Coefficient of expansion (60°F -160°F) (15.5°C - 71.1°C) per °F	0.00041

Specific Heat

Temperature, °F (°C)	BTU/lb/°F
-60 (-54)	0.361
-30 (-34.4)	0.377
0 (-17.8)	0.392
80 (26.7)	0.453
150 (65.6)	0.493
200 (93.3)	0.523
250 (121.1)	0.552

Thermal Conductivity

Temperature, °F (°C)	BTU-ft ² /hr./°F
-65 (-54)	0.0816
0 (-17.8)	0.0802
100 (37.8)	0.0777
200 (93.3)	0.0753
300 (148.9)	0.0730

Bulk Modulus, Adiabatic, at 76°F (24.4°C)

Pressure, PSI	Bulk Modulus, PSI
0	232,000
1000	243,000
2000	255,000
3000	266,000

Vapor Pressure

Temperature, °F (°C)	mm of Hg.
294 (145.6)	30.3
272 (133.3)	17.9
254 (123.3)	12.2
230 (110.0)	6.7
194 (90.0)	2.9
55 (12.8)	0.01
0 (-17.8)	0.0006
-65 (-54)	0.000005

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